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TITLE: Polyclonal antibody libraries

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INVENTOR-INFORMATION:

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US-CL-CURRENT: 435/6; 435/69.1, 435/70.21, 436/536, 530/387.3

CLAIMS:

I Claim:

1. A library of receptor proteins expressed from a library of vectors wherein each vector contains a nucleic acid segment that encodes a pair of variable regions, which is contained in one of the receptor proteins, wherein the variable regions of each pair associate with each other to form a binding domain, and wherein the totality of nucleic acid segments in said library of vectors is diverse forming a library of polyclonal nucleic acid segments, wherein said library of polyclonal nucleic acid segments has been transferred in mass from a parent library of vectors to said library of vectors, wherein the vectors of said library of vectors have been modified, relative to the vectors of said parent library of vectors, by addition, subtraction, or substitution of coding sequences, and wherein said parent library of vectors has been selected in mass, for a subset of binding domains from a grandparent library of vectors, without characterization of all individual members of said grandparent library of vectors before said transfer from said parent library of vectors to said library of vectors without individual characterization of all members.

2. A library of recombinant receptor proteins wherein each receptor protein contains a pair of variable regions, wherein the variable regions of each pair associate with each other to form a binding domain, and wherein the totality of variable regions in said library of receptor proteins is diverse forming a library of variable regions, wherein said library of variable regions has been transferred in mass from a parent library of receptor proteins to said library of receptor proteins, wherein the receptor proteins of said library of receptor proteins have been modified, relative to the receptor proteins of said parent library of receptor proteins, by addition, subtraction, or substitution of sequences.

3. The library of claim 2 wherein said parent library of receptor proteins has been selected in mass, from a grandparent library of receptor proteins, for a

subset of binding domains before said transfer from said parent library of receptor proteins to said library of receptor proteins.

4. The library of receptor proteins of claim 1, 2 or 3 wherein said receptor proteins are specific for one or more antigens.

5. The library of receptor proteins of claim 1, 2 or 3 wherein said receptor proteins are soluble proteins.

6. The library of receptor proteins of claim 1, 2 or 3 wherein said receptor proteins are cell surface proteins.

7. The library of receptor proteins of claim 1, 2 or 3 wherein said receptor proteins are antibodies of one or more isotypes selected from the group of isotypes consisting of IgG, IgM, IgA, IgE, and IgD.

8. The library of claim 7 wherein said antibodies are labeled with tags that facilitate detection and/or therapy.

9. The library of claim 8 wherein said tag is a radioactive molecule, toxic molecule, or enzyme molecule.

10. The library of claim 7 wherein said antibodies or parts thereof are derived from humans, mice, rabbits, or chickens.

11. The library of claim 7 wherein said antibodies are chimeric antibodies with variable regions derived from one species and constant regions derived from another species.

12. The library of claim 11 wherein said chimeric antibodies have murine variable regions and human IgG1 constant regions.

13. The library of claim 7 wherein said antibodies are truncated antibodies.

14. The library of claim 13 wherein said truncated antibodies are Fv fragments.

15. The library of claim 13 wherein said truncated antibodies are single-chain Fv fragments.

16. The library of claim 13 wherein said truncated antibodies are Fab fragments.

17. The library of claim 13 wherein said truncated antibodies are F(ab').sub.2 fragments.

18. The library of claim 7 wherein said antibodies have been further modified by mutagenesis.

19. The library of claim 7 wherein said antibodies are chimeric antibodies with antibody variable regions attached to enzymes, T cell receptors, or portions thereof.

20. The library of claim 19 wherein said antibody variable regions are attached to enzymes.

21. The library of claim 7 wherein said antibody variable regions are attached to T cell receptors or constant regions of T cell receptors.

22. The library of claim 1, 2 or 3, wherein the library of receptor proteins has been modified from said parent library of receptor proteins by said members having a constant region from a different species than the variable regions.

23. The library of claim 1, 2 or 3, wherein the library of receptor proteins is a library of antibodies, and wherein said library has been modified from the parent library by comprising whole antibodies.

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